

DNA MONTHLY THERMOMIXER TEMPERATURE VERIFICATION

A. SCOPE

- A.1 This procedure outlines the steps involved in the monthly ThermoMixer temperature verification utilizing a NIST traceable thermometer.

B. QUALITY CONTROL

- B.1 Protective gloves, scrubs, a lab coat, and a mask must be worn at all times when performing this procedure to prevent contamination.
- B.2 The NIST traceable thermometer will be replaced or sent out for recalibration every year.

C. SAFETY

- C.1 Protective gloves, scrubs, a lab coat, and a mask must be worn at all times when performing this procedure.
- C.2 Handle the NIST traceable thermometer with care while carrying the thermometer to each ThermoMixer.

D. REAGENTS, STANDARDS AND CONTROLS

- D.1 N/A

E. EQUIPMENT

- E.1 NIST traceable thermometer with either a flexible or non-flexible temperature probe
- E.1.1 The thermometers can be found in a labeled drawer in Room 140.
- E.1.2 If a NIST traceable thermometer with a flexible probe is being used, set the units on the thermometer to degrees Celsius and push the "0.1°" button to display the temperature to the tenth degree.
- E.1.3 If a NIST traceable thermometer with a non-flexible probe is being used, set the units on the thermometer to degrees Celsius.
- E.2 Eppendorf ThermoMixer
- E.3 Eppendorf Smartblock (1.5 or 2 mL)
- E.4 Eppendorf ThermoTop
- E.5 Microcentrifuge tubes
- E.6 DOC ID [1801](#)

F. PROCEDURES

- F.1 Insert the thermometer into a water filled microcentrifuge tube in each ThermoMixer.

Document ID	Revision	Approval	Date Published
6161	9	Supervising Criminalist - Biology	8/28/2018 10:01:10 AM

- F.2 If a NIST traceable thermometer with a flexible probe is being used, place the ThermoTop on the device, being careful not to damage the probe wiring. If a NIST traceable thermometer with a non-flexible probe is being used, the ThermoTop cannot be placed on the device.
- F.3 Ensure that Program 1 (named "EXTRACTION"); Program 2 (named "10 MIN AL STEP"); or Program 3 for Thermomixer "D" (named "QIACUBE DIFF") is loaded on the ThermoMixer.
- F.4 Let the thermometer sit in the microcentrifuge tube until the 56 °C set temperature has been reached (70 °C for Thermomixer D) before recording the NIST thermometer temperature (only one value will be shown on the ThermoMixer display when this occurs).
- F.5 Record the temperature reading from the NIST thermometer in Beast's LAM system.
- F.6 If any "ACTUAL" temperature reading falls outside the permitted range of 53° - 59 °C (67 °C - 73 °C for Thermomixer D), inform the Technical Leader immediately and place an out of service sign on the ThermoMixer until it has been repaired.

G. INTERPRETATION GUIDELINES

Not applicable

H. REFERENCES

- H.1 Eppendorf ThermoMixer C Operating Manual. Eppendorf AG, Hamburg, Germany, 2013.
- H.2 Traceable Digital Thermometer With Recorder Output Instructions. Control Company, Friendswood, Texas.

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